

TRANSLATION**PATENT COOPERATION TREATY****PCT****INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P 67787	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/DE2004/001804	International filing date (day/month/year) 12.08.2004	Priority date (day/month/year) 19.08.2003
International Patent Classification (IPC) or national classification and IPC C01B3/00		
Applicant GKSS-FORSCHUNGSZENTRUM GEESTHACHT GMBH		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising:	
a.	<input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.	
b.	<input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items:	
<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

PCT/DE2004/001804

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-10 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-14 _____ received by this Authority on 21.08.2005 with letter
- nos.* _____ received by this Authority on of 17.08.2005
- ☒ the drawings:
- sheets 1/1 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	7-8	YES
	Claims	1, 6	NO
Inventive step (IS)	Claims	7-8	YES
	Claims	1-6, 9-14	NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)	<p>Reference is made to the following documents:</p> <p>D1: EP-A-1 100 141 (TOYOTA MOTOR CO LTD; MATSUSHITA ELECTRIC IND CO LTD (JP)) 16 May 2001 (2001-05-16)</p> <p>D2: EP-A-0 936 686 (CANON KK) 18 August 1999 (1999-08-18)</p> <p>D3: US 2003/013605 A1 (OELERICH WOLFGANG ET AL) 16 January 2003 (2003-01-16)</p> <p>D4: DE 199 13 714 A (GEESTHACHT GKSS FORSCHUNG; GFE MET & MAT GMBH (DE)) 28 September 2000 (2000-09-28).</p> <p>1. Document EP-A-1 100 141 (D1) (claims 1-2) discloses a battery with a metal-containing, hydrogen-storing electrode, which also contains Zn in the form of carbonate. Consequently, the subject matter of claim 1 is at best novel owing to the nano-crystalline structure of the metal. However, the term "nano-crystalline structure" has no generally recognized meaning and therefore cannot be distinguished from the structure of document D1. As a result, the subject matter of claim 1 is not novel.</p>		

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2.	In addition, the use of so-called nano-crystalline structures for increasing the reaction speed of hydrogen-storing materials is routine (see, for example, document D3, figure 22, or document D4, column 2, lines 48-56). Consequently, this use would also not be inventive if the novelty of the subject matter of claim 1 was recognized.
3.	Furthermore, the subject matter of claim 1 is also not novel over document EP-A-936 686 (D2). Document D2 (abstract) discloses a battery having a metal-containing, hydrogen-storing electrode, which consists of a hydrogen-storing alloy (102) and a carbonate (103).
4.	Dependent claims 2-5 add features which are known from documents D1, D2, D3 or D4 or are routine in the art.
5.	Furthermore, document D2 discloses subjecting the hydrogen-storing alloy to a grinding process (examples). Consequently, the subject matter of claim 6, wherein the metal-containing material and/or the catalyst undergo a grinding process, is not novel.
6.	The conditions specified in claims 9-14 are routine during the grinding of hydrogen-storing alloys. Consequently, these claims cannot substantiate an inventive step.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
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7. The subjects of claims 7-8 are novel since the catalyst is likewise ground. Consequently, the brittle carbonates are reduced to smaller particles . This achieves the object of increasing the reaction kinetics (pages 3 and 4) .